

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

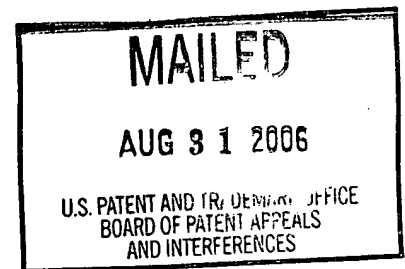
**UNITED STATES PATENT AND TRADEMARK OFFICE**

**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Ex parte RANDY D. PETREA, ROBERT L. SCHUETTE,  
and SHIRLEY A. WHITESIDE

Appeal No. 2006-2324  
Application No. 09/851,042

ON BRIEF



Before GRIMES, GREEN, and LEOVITZ, Administrative Patent Judges.

GRIMES, Administrative Patent Judge.

DECISION ON APPEAL

This appeal involves claims to a polyurethane film. The examiner has rejected the claims for obviousness-type double patenting, anticipation, and obviousness. We have jurisdiction under 35 U.S.C. § 134. We affirm.

Background

As recited in the specification, "[t]he term polyurethane films . . . is intended to cover any standard polyurethane-type thin (from about 10 mils to about 500 mils in thickness) extruded sheets of polyurethane or polyurethane-containing thermoset or thermoplastic." Page 6, lines 1-3. Such films have been used in the packaging industries for many years. Page 6, lines 4-5.

The specification describes “a polyurethane film comprising a silver-based inorganic antimicrobial compound in discrete areas of said film wherein at least some of said antimicrobial compound is present at the surface of said film and, optionally, at least some of said antimicrobial is present within said film.” Page 4, lines 7-10. Silver-based inorganic antimicrobial compounds include silver-based zirconium phosphates, silver ions, elemental silver, silver-based zeolites, and silver-based glasses. Page 5, lines 2-8.

The specification states that the polyurethane films exhibit “anti-tack characteristics without the presence of an appreciable amount of anti-tack surface agents thereon.” Page 4, lines 18-20. The specification states that “it is believed that such anti-tack benefits are the result of antimicrobial particles present on the surface of the target polyurethane films. Such particles appear to extend outward from the film surface a distance sufficient to prevent repeated and continuous contact between polyurethane components of two separate films (or different portions of the same film).” Page 8, lines 8-12.

### Discussion

#### 1. Claim construction

Claims 34 and 36-42 are pending and on appeal. Because none of the claims have been separately argued, the claims stand or fall together. 37 CFR § 41.37(c)(1)(vii). We will focus on claim 34, which is representative and reads as follows:

34. An extruded anti-tack polyurethane film exhibiting a thickness of from 10 to about 500 mils and having both an interior portion and exterior surface therein, said extruded film comprising a silver-

based inorganic antimicrobial compound selected from the group consisting of silver zirconium phosphate compounds, silver-based zeolites, silver-based glasses, and any mixtures thereof in discrete areas of said extruded film wherein at least some of said antimicrobial compound is present at and extending outward from said exterior surface of said extruded film and at least some of said antimicrobial is present within said interior of said extruded film; wherein said film exhibits a tackiness less than that of the same type of extruded polyurethane extruded [sic] film without said silver-based inorganic antimicrobial compound present at and extending outward from the surface thereof; and wherein said extruded polyurethane film does not require the presence of any other anti-tack surface coatings or additives in order to exhibit such anti-tack properties.

Thus, claim 34 is directed to an extruded polyurethane film having a thickness of from 10 to about 500 mils, that is, from 0.254 mm to about 12.7 mm.<sup>1</sup> The polyurethane film comprises a silver-based inorganic antimicrobial compound in discrete areas of the film. Webster's II Dictionary<sup>2</sup> defines the term "discrete" as "1. Constituting a separate thing : DISTINCT. 2. Made up of unconnected distinct parts." Thus, the antimicrobial compound is in unconnected distinct parts of the film.

Claim 34 also states that the antimicrobial compound is a silver zirconium phosphate compound, a silver-based zeolite, or a silver-based glass, and that at least some of the antimicrobial compound is present both within the interior of the film and at and extending outward from an exterior surface of the film. Finally, claim 34 states that the presence of antimicrobial compound at and extending outward from the exterior surface reduces the tackiness of the film and that the film exhibits anti-tack properties without requiring the presence of any other anti-tack surface coating or additive.

---

<sup>1</sup> A mil is equivalent to 0.0254 millimeters. Webster's II New Riverside University Dictionary, Houghton Mifflin Co., 1984 (attached).

<sup>2</sup> Webster's II New Riverside University Dictionary, Houghton Mifflin Co., 1984. A copy of the cited definition is attached.

## 2. Obviousness-Type Double Patenting

The examiner rejected claims 34 and 37 under the judicially created doctrine of obviousness-type double patenting over claims 1 and 8 of Petrea.<sup>3</sup> The examiner argued that Petrea claims an antimicrobial spandex fiber containing, in discrete areas of the fiber, “an antimicrobial compound selected from triclosan, a silver based zeolite, a silver based glass, and mixtures thereof,” and that Petrea, at column 4, lines 12-13, defines the term “spandex” as covering “standard polyurethane-type fibers.” Examiner’s Answer, page 3.

Appellants acknowledge the examiner’s argument and state that they are willing to file a terminal disclaimer with regard to Petrea “once all other issues of patentability have been resolved.” Appeal Brief, page 4. In the absence of any arguments traversing the obviousness-type double patenting rejection, we summarily affirm the rejection of claims 34 and 37.

## 3. Anticipation

The examiner rejected claims 34, 36, and 38-42 under 35 U.S.C. § 102(b) as anticipated by Katsura.<sup>4</sup> The examiner argued that Example 1 of Katsura describes a 0.3 mm thick sheet formed by blending polyurethane resin pellets with an antibacterial and antifugal agent, plasticizing and extruding. Examiner’s Answer, page 4, lines 4-6. In Comparative Example 2, Katsura describes kneading “[t]he same polyurethane resin used in Inventive Example 1 . . . with . . . an inorganic silver base antibacterial and antifugal agent, silver-added zirconium phosphate.” Col. 7, lines 35-37.

---

<sup>3</sup> Petrea et al., U.S. Patent No. 6,479,144, issued November 12, 2002.

<sup>4</sup> Katsura et al., U.S. Patent No. 5,941,369, issued August 24, 1999.

The examiner argued that the polyurethane resin extrusion sheet produced by the process described in Comparative Example 2 meets all of the limitations of claim 34. Examiner's Answer, page 4. Specifically, the examiner argued that "[t]he spatial orientation of the antimicrobial compound and the anti-tack/cohesive properties of the film are inherent since the prior art [Katsura] and the instant invention are not structurally distinguishable," in that both are polyurethane films with the claimed thickness and silver-based inorganic antimicrobial compound. Examiner's Answer, page 4, lines 12-15; pages 8-9.

Appellants argue that Katsura does not describe a film in which the antimicrobial compound is located in discrete areas of the film. Specifically, Appellants argue that Katsura describes a uniform dispersion of the antimicrobial compound within the resin and that the limitation of "discrete areas" "appears to be in clear contrast to the uniform dispersion advocated by the teachings of Katsura." Appeal Brief, page 5.

We disagree. As pointed out by the examiner, Webster's Dictionary<sup>5</sup> defines a "dispersion" as "a system consisting of a dispersed substance and the medium in which it is dispersed," and Grant & Hackh's Chemical Dictionary<sup>6</sup> defines a "dispersed system" as "[a]n apparently homogenous substance which consists of a microscopically heterogenous mixture of 2 or more finely divided phases." Examiner's Answer, page 7. Based on the ordinary meaning of the term "dispersion," we agree with the examiner that, in a dispersion of an antimicrobial compound within a polyurethane film, the antimicrobial compound is in unconnected distinct parts of the film and is therefore "in

---

<sup>5</sup> Webster's Ninth New Collegiate Dictionary, Merriam-Webster Inc., 1986. A copy of the cited definition was made of record with the Office action mailed Oct. 5, 2004.

<sup>6</sup> Grant & Hackh's Chemical Dictionary, McGraw-Hill, Inc., 1987. A copy of the cited definition was made of record with the Office action mailed Oct. 5, 2004.

discrete areas of the film,” as this phrase would have been understood by one of ordinary skill in the art. Thus, we agree that Appellants have not overcome the examiner’s prima facie case of anticipation.

For these reasons, we affirm the § 102(b) rejection of claim 34 over Katsura. Claims 36 and 38-42 fall with claim 34.

#### 4. Obviousness

The examiner rejected claims 34 and 36-42 under 35 U.S.C. § 103 as obvious over Krall<sup>7</sup> in view of Ohashi.<sup>8</sup> The examiner argued that Krall describes embedding antimicrobial silver in polyurethane, teaches that the metal may be embedded in the plastic in the form of discrete particles and that the product may be extruded into shape, and discloses a polyurethane film comprising silver and having a thickness of 0.25 mm. Examiner’s Answer, page 4, line 19, to page 5, line 2.

The examiner acknowledged that Krall does not teach the silver compounds of claim 34, but argued that Ohashi describes a polyurethane container exhibiting antimicrobial properties that incorporates silver-based zirconium phosphate, which “provides less discoloration and deterioration.” The examiner reasoned that “[i]t would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Krall et al and [Ohashi] and utilize the instant silver-based antimicrobial compound. One would have been motivated to use [Ohashi’s] silver based zirconium phosphate instead of Krall’s silver since it provides less discoloration and deterioration.” Examiner’s Answer, page 5, lines 3-14.

---

<sup>7</sup> Krall et al., U.S. Patent No. 5,976,562, issued November 2, 1999.

<sup>8</sup> Ohashi et al., Japanese Patent Publication No. JP 09-002537 A, published January 7, 1997.

The examiner argued that the claimed anti-tack properties would have been inherent in the combined teachings of Krall and Ohashi. In particular, the examiner stated that Krall teaches a film that is substantially identical to the claimed film.

Examiner's Answer, page 10, lines 15-22. In addition, the examiner relied on Petrea and the specification to demonstrate inherency:

Petrea discloses that antimicrobial particles including the instant silver-based antimicrobials have been found to have excellent anti-tack properties since they extend outward from the surface of the polyurethane. See column 5, lines 26-52. Moreover, applicant's specification on page 5 also discloses that the incorporation of the silver compounds into the film, including elemental silver, affords the instant anti-tack property. . . Although the silver compound [of Krall] is not the instant silver, the instant disclosure teaches that silver compounds including elemental silver (the agent utilized by Krall) extend outward from the resin once extruded to provide the instant properties. . . Even if one were to argue that Krall does not have the instant properties since Krall teaches elemental silver, it is the examiner's position that the instant properties would necessarily flow from the combined teaching of Krall et al and [Ohashi].

Examiner's Answer, page 11. See also the Final Rejection, at page 7 (citing Petrea, column 3, lines 8-65).

Appellants argue that "the polyurethane articles cited in [Krall and Ohashi] do not necessarily exhibit the anti-tack characteristics as presently claimed. It is the presence of the silver-based antimicrobial compound 'in discrete areas of said extruded film wherein at least some of said antimicrobial compound is present at and extending outward from said exterior surface of said extruded film and at least some of said antimicrobial is present within said interior of said extruded film' that yields the anti-tack properties, not the presence of the compound itself." Appeal Brief, page 7. Appellants also argue that the examiner has not provided "a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent

characteristic necessarily flows from the teachings of the applied art.” Appeal Brief, pages 7-8.

We conclude that the examiner has provided a reasonable basis for concluding that the anti-tack properties recited in claim 34 would have been inherent. In particular, we agree with the examiner that the specification and Petrea provide evidence that incorporating silver based zirconium phosphate (as taught in Ohashi), or silver (as taught in Krall), in polyurethane provides the polyurethane with anti-tack properties.

With regard to Appellants’ argument that “[i]t is the presence of the silver-based antimicrobial compound ‘in discrete areas of said extruded film wherein at least some of said antimicrobial compound is present at and extending outward from said exterior surface of said extruded film and at least some of said antimicrobial is present within said interior of said extruded film’ that yields the anti-tack properties, not the presence of the compound itself,” we conclude that the evidence of record reasonably shows that these structural properties are inherent in the combination of Krall with Ohashi.

In particular, Krall describes embedding the antimicrobial metal(s) or metal compounds in polyurethane plastic “in the form of discrete particles.” Col. 1, lines 6-21; col. 2, lines 5-9; col. 3, lines 55-58. In addition, to give the plastic its final shape, Krall describes using extruders. Col. 4, lines 59-60. The instant specification states that “upon extrusion of the polyurethane with the desired antimicrobial, the target films will contain such antimicrobial compounds throughout their structures,” including at the surface, and that suitable antimicrobial compounds include silver-based zirconium phosphates and elemental silver. Page 6, lines 8-16; page 5, lines 2-8. In addition, the specification states that “it is believed that [the] anti-tack benefits are the result of



antimicrobial particles present on the surface of the target polyurethane films. Such particles appear to extend outward from the film surface a distance sufficient to prevent repeated and continuous contact between polyurethane components of two separate films (or different portions of the same film).” Page 8, lines 8-12. Thus, the evidence of record supports the examiner’s position that the structural properties, and thus the anti-tack properties, of claim 34 would be inherent in a product resulting from the combination of Krall with Ohashi.

We conclude that the examiner has set forth a prima facie case that the combination of Krall with Ohashi would result in a film according to claim 34. Appellants have not rebutted the examiner’s prima facie case of obviousness. Therefore, we affirm the rejection of claim 34 over Krall in view of Ohashi. Claims 36-42 fall with claim 34.

The examiner also rejected claims 34 and 36-42 under 35 U.S.C. § 103 over Takahashi<sup>9</sup> in view of Ohashi. Because we conclude that claims 34 and 36-42 would have been obvious in view of Krall and Ohashi, we need not decide whether these claims would also have been obvious in view of Takahashi and Ohashi.

### Summary

The examiner’s position is supported by the preponderance of the evidence of record. Therefore, we affirm the rejection of claims 34, 36, and 38-42 under 35 U.S.C. § 102(b) as anticipated by Katsura and the rejection of claims 34 and 36-42 under 35 U.S.C. § 103 as obvious over Krall in view of Ohashi, as well as the obviousness-type double patenting rejection. We do not reach the rejection of claims 34 and 36-42 under 35 U.S.C. § 103 as obvious over Takahashi in view of Ohashi.

---

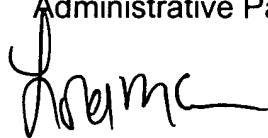
<sup>9</sup> Takahashi et al., Japanese Patent Publication No. JP 11-028797 A, published February 2, 1999.

No time period for taking any subsequent action in connection with this appeal  
may be extended under 37 CFR § 1.136(a).

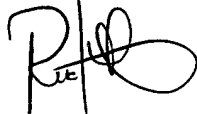
AFFIRMED



Eric Grimes  
Administrative Patent Judge



Lora M. Green  
Administrative Patent Judge



Richard M. Lebovitz  
Administrative Patent Judge

)  
)  
)  
)  
) BOARD OF PATENT  
)  
) APPEALS AND  
)  
) INTERFERENCES  
)  
)  
)

EG/MLM/hs

Milliken & Company  
P.O. Box 1927  
Spartanburg, SC 29304